

## ABSTRACT OF THE DISCLOSURE

The invention provides a process for producing a decaffeinated coffee plant by genetic recombination comprising a step for preparing an antisense sequence or an RNAi sequence of a gene coding for an enzyme related to the caffeine biosynthetic pathway and constructing an expression vector for transformation, a step for introducing the obtained expression vector into Agrobacterium, a step for infecting a cell division-activated tissue piece of a coffee plant or a callus or an adventitious embryo induced from a tissue piece of a coffee plant with the Agrobacterium to transform the tissue piece, the callus or the adventitious embryo and a step for obtaining an transformed coffee plant from a transformed tissue piece, a transformed callus or a transformed adventitious embryo so that a coffee plant with low caffeine content can be produced by suppressing expression of a gene coding for an enzyme related to the caffeine biosynthetic pathway by the antisense method or the RNAi method.